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14 (2) the humanized heavy chain comprising three  
15 complementarity determining regions (CDR1, CDR2 and CDR3) having  
16 amino acid sequences from the corresponding complementarity  
17 determining regions of [a] the mouse 21-6 immunoglobulin heavy  
18 chain variable domain designated SEQ. ID. No. 4, and a variable  
19 region framework from a human heavy chain variable region  
20 framework sequence except in at least one position selected from  
21 a second group consisting of H27, H28, H29, H30, H44, H71,  
22 wherein the amino acid position is occupied by the same amino  
23 acid present in the equivalent position of the mouse 21-6  
24 immunoglobulin heavy chain variable region framework;  
25 wherein the humanized immunoglobulin specifically binds to  
26 [a] VLA-4 [ligand] with a binding affinity having a lower limit  
27 of about  $10^7 \text{ M}^{-1}$  and an upper limit of about five-times the  
28 binding affinity of the mouse 21-6 immunoglobulin.

1 17. (Amended) An antigen-specific binding fragment of the  
2 humanized immunoglobulin of claim 14 or claim 16.

1 22. (Amended) A nucleic acid encoding a heavy chain of a  
2 humanized antibody of claim 1 or an antigen-specific binding  
3 fragment thereof.

1 23. (Amended) A nucleic acid encoding a light chain of a  
2 humanized antibody of claim 1 or an antigen-specific binding  
3 fragment thereof.

1 24. (Amended) An apparatus comprising a [A] computer  
2 programmed to display a three-dimensional representation of a  
3 humanized immunoglobulin of claim 1 ~~on a monitor.~~

1 26. (Amended) A method for detecting VLA-4 antigen, the  
2 method comprising:  
3 administering a humanized immunoglobulin of claim 14 or  
4 16, or an antigen-specific binding fragment thereof, to [a  
5 patient or] a tissue sample [therefrom] from a patient; and